

REMARKS

Claims 1-45 were examined, and are presented for reconsideration. Claims 1, 31 and 38 are independent.

The indication of allowable subject matter in claims 10-13, 17, 19-22 and 27-30 is noted, with appreciation. The other claims stand rejected over Yamada (GB 2 027 316). Claims 1-4, 6, 9, 14, 15, 18 and 23-26 are said to be anticipated by Yamada under 35 U.S.C. §102(b). Claims 5, 7, 8, 16, 19-22 and 31-45 are said to be unpatentable over Yamada under 35 U.S.C. §103(a). These rejections are respectfully traversed for the reasons of record, and for at least the following additional reasons.

INDEPENDENT CLAIM 1

Claim 1 recites that “the suspension [for supporting the massive member] acts in a plane *generally passing through the centre of mass* of the massive member, thereby reducing any moment acting on the suspension.” This arrangement yields a balanced exciter. See ¶40 of the specification. In contrast, Yamada’s exciter is unbalanced. The drawing figures show the suspension (referred to as a damper 6) as being in the plane of the magnet gap and coil. This is repeatedly pointed out in the text. See, e.g., page 3, lines 10-12, 15-22, and 114-116 of Yamada. The purpose of this arrangement is so that “the relative displacement between the gap and the coil can be minimized...” (page 3, lines 116-119). This location of the suspension (damper 6) is well forward of (not even close to) the center of mass of the magnet assembly, as would be plain to anyone skilled in the art. The suspension in Yamada thus does not act in a plane “generally passing through the centre of mass” of the magnet assembly.

Underpinning the prior art rejections of claims 1-9, 14, 15, 16, 18 and 23-26 is a rejection for indefiniteness under 35 U.S.C. §112, 2nd ¶. The Office Action asserts that Yamada meets the “generally passing through the centre of mass” limitation of claim 1 because “generally” as used in claim 1 “is a relative term, which renders the claim indefinite;” and that “generally” is therefore is entitled to an expansive scope that encompasses Yamada’s offset arrangement. Applicant respectfully disagrees.

The word “generally” in the phrase in question is a term of degree in a phrase that describes a positional relationship. The lack of a precise definition of the term in the specification does not make the term or the phrase indefinite.

The fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. 112, second paragraph. *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, *in light of the specification*.

MPEP §2173.05(b) (emphasis added). Here, one of ordinary skill in the art would have no trouble understanding the claimed positional relationship *in the context of Applicant’s disclosure*, which explicitly compares the exciter of the invention to the prior art, in particular to the example depicted in Fig. 1 and described in ¶[0007] to ¶[0010].¹

The inventors have recognized certain problems with typical inertial exciters in the prior art (see ¶[0010]), namely, “creep” and rocking. Further, they have deduced that these problems are due to the fact that “the suspension is spaced away from the plane of the centre of mass 36 of the magnet assembly ...” (¶[0035]), the offset arrangement resulting in a moment exerted by the relatively massive moving magnet assembly “acting through its centre of mass, M” (¶[0010]). Their solution – this invention – is to fashion a suspension that “acts in a plane generally passing through the centre of mass of the massive member, thereby reducing any moment acting on the suspension.” Specification, ¶[0018]; claim 1.

In the examples disclosed, “the suspension points 68 are in the plane of the centre of mass of the massive member of the exciter, in this case the magnet assembly 48, 50, 52.” Specification, ¶[0040]. Thus, “the exciter is balanced ..., the problems of ‘creep’ ... should be alleviated ... and “such balance will help reduce unwanted rocking modes....” *Id.*

¹ The Office Action, page 3, criticizes the disclosure for failing “to teach a means, such as a specific mass or any other pertinent parameters by which to ascertain the specific location of the center of mass for the applicant’s magnetic assembly....” This criticism is unwarranted. Basic physics teaches that the location of the center of mass of an object, which is the same as the center of gravity in uniform gravity, can be determined empirically, as would be understood by one skilled in the art.

Note the use of the words “alleviated” and “reduce” in the specification, and “reducing” in claim 1, which compare the performance of an exciter of the invention to one in the prior art. Absolute terms, such as “eliminate” or “avoid” (in connection with creep and rocking) do not appear. This simply acknowledges reality. One of ordinary skill in the art would appreciate that such perfection is not readily, if ever, achievable. As the magnet assembly oscillates, its center of mass necessarily moves to and fro relative to the plane of the suspension, which is defined by its mounting points. For a horizontally mounted exciter, the moments created by this oscillation should for the most part cancel each other out. For a non-horizontally mounted exciter there might be a small net moment that could tend to induce rocking or creep. In either case the motion of the magnet assembly will fluctuate as a function of the applied electrical signal, and that, too, could lead to a small imbalance. Thus, one of ordinary skill in the art would recognize that, due to geometrical, gravitational and operational factors, a 100% “purely balanced” exciter – totally devoid of creep or rocking – could be impossible to achieve for all installations, orientations and uses.

Reality also is acknowledged by use of the term “generally” to describe how the suspension acts: “in a plane *generally* passing through the centre of mass of the massive member.” See claim 1, the abstract, ¶[0018] and ¶[0049]. Again, as the magnet assembly oscillates, its center of mass necessarily moves through the plane of the suspension and beyond it on either side. Thus, as one skilled in the art would understand, the center of mass inherently does not remain in the plane of the suspension throughout operation of the exciter. Rather, it is the approximate midpoint *of the excursion* of the moving center of mass that lies in the plane of the suspension. Thus, it is reasonable and appropriate simply to refer to the suspension as acting “in a plane *generally* passing through the [moving] centre of mass of the massive member.” And “generally,” like the ubiquitous claim term “substantially,” also connotes a permissible degree of latitude where relative positioning is claimed.

To maintain here that “generally” is indefinite is at odds with settled USPTO practice. Many US patents have been granted with claims that use “generally” in very similar circumstances, i.e., to denote positional relationships, where there is no special definition of the term in the disclosure. The following table lists a *mere sampling* of such patents.

Patent #	Claim Excerpt & Location	Subject Matter
4,178,473	“said first open end <i>in general alignment with</i> the aperture” (claim 12)	loudspeaker
4,054,750	“the axes thereof <i>in general parallel relationship</i> ” (claim 1)	loudspeaker
4,098,509	“said position on said arm is located <i>in general alignment with</i> said loop and pressure member” (claim 9); and “a free end positioned <i>in general alignment with</i> said attachment means” (claim 11)	golfing device
5,400,720	“a center of gravity of said table is retained vertically <i>above the general vicinity of</i> an area on said platform” (claims 1, 9)	lift and tilt table
5,212,371	“and a lense ... to provide an oblong spot <i>in the general vicinity of</i> the center of the scan across the bar code” (claim 1)	bar code scanner
4,557,061	“the other end ... is moveably positioned at a location <i>generally in the vicinity of</i> the somital line of the foot and at the top of the foot” (claim 6)	ski boot
4,182,134	“the mounting plane passes <i>in the general vicinity of</i> the center of gravity of said engine-compressor unit” (claim 5)	refrigeration unit
4,146,221	“manifold conduit mounted <i>generally medially of</i> the court area and transversely below said deck panels <i>in the general vicinity of</i> the transverse net line” (claim 7)	platform paddle tennis court
3,966,122	“sprinkler head is rotatably mounted on a rotational axis which is substantially aligned with <i>the general vicinity of</i> impingement of the water splashed against the splash-guard such that little or no rotary torque is applied at anytime to the sprinkler head” (claims 1, 10)	water sprinkler
5,595,155	“the compression blade balancing mass of one of the blade drivers positioned <i>in general axial alignment with</i> the compression blade of the other blade driver and with the combustion blade balancing mass of one of the blade drivers positioned <i>in general axial alignment with</i> the combustion blade of the other blade driver” (claim 1)	rotary internal combustion engine
4,258,538	“a top edge transverse said opposite side edges and located <i>in general registry with</i> said second edge” (claims 6, 23)	grass catcher bag

The Office must apply the law and its rules consistently. In light of the pervasive grant of patents in diverse technologies – including loudspeakers – with claims having “generally” clauses of the same or similar type and in similar circumstances as here, Applicant’s claim 1 cannot be rejected as indefinite.

When the §112 rejection is withdrawn, there is no longer a basis for maintaining the prior art rejections of claim 1 or any of its dependent claims. As noted, Yamada's suspension does not act in a plane "generally passing through the centre of mass" of the magnet assembly. Reconsideration and withdrawal of all of these rejections is therefore appropriate.

DEPENDENT CLAIMS 4, 15 AND 26 (35 U.S.C. §112)

The term "generally" also appears in claims 4, 15 and 26. The §112 rejection mentions this at the outset, but then only focuses on the use of "generally" in claim 1, without explaining why the different use of "generally" in these claims is indefinite. Claims 4, 15 and 26 recite, "wherein the suspension is *generally* planar," which Applicant submits is perfectly clear. Like the synonymous phrase "*substantially* planar," it is a ubiquitous and perfectly acceptable way of connoting a permissible degree of latitude about a physical characteristic. The §112 rejection of claims 4, 15 and 26 should therefore be withdrawn.

INDEPENDENT CLAIMS 31 AND 38

Claims 31 and 38 recite a base plate *for attachment to an acoustic radiator* of a bending wave loudspeaker in a non-repeatedly engageable manner, and an exciter attached to the base plate in a repeatedly engageable manner. For reasons already of record, Yamada does not disclose or suggest such an arrangement.

Additionally, it should be noted that the rejection (Office Action, page 4, lines 3-4) confuses the "base plate" with the "exciter." The frame 2 of Yamada referred to in the Office Action must be considered as part of the "exciter" since – together with frame 3 – it defines a casing 1 having holes 18 through which screws are inserted for fitting the casing to a "vibration plate" (see page 3, lines 29-32 of Yamada). Frame 2 thus cannot be considered a "base plate" in the sense of claims 31 and 38.

Moreover, as explained in the response filed January 24, 2005 (last paragraph on page 2), Yamada's so-called "vibration plate" 37 is *not for attachment to an acoustic radiator* as recited in the claims: it is significantly larger than the exciter and as such does not allow the application of quasi-point forces as is required for bending wave loudspeakers. To reinforce

this point, claims 31 and 38 have been amended to specify the mounting of the exciter to a "bending wave" radiator.

CONCLUSION

Applicant respectfully submits that the application is in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the application.

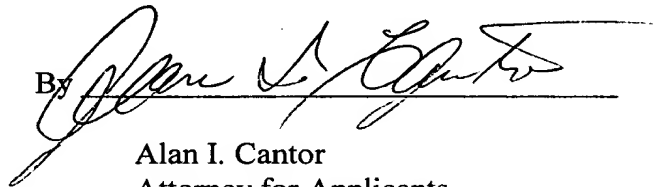
The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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